

# **BULGARIAN ENERGY SECTOR: ASSESSMENT**

Prepared for  
**USAID/Bulgaria**  
by

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## I. EXECUTIVE SUMMARY

The energy sector in Bulgaria plays a key role in the economic and political stability of the country and the region. Substantial but only partial reform has been achieved. Great potential for progress remains; the current government appears poised for change; and Bulgaria can learn from the “first generation” experiences in sector reform elsewhere to catch up and avoid costly mistakes. USAID now has a unique opportunity to further reforms in the Bulgarian energy sector because the new Ministry of Energy is knowledgeable and supportive of reforms, SERC development is in its early stages, a new energy law or redraft of the current energy law is anticipated this year, and industry participants welcome assistance.

This report recommends that USAID provide targeted assistance to assist the Ministry of Energy and Energy Resources (“MEER”) to develop the new or amended energy law, and strengthen the State Energy Regulatory Commission (“SERC”), focusing on tariff, accounting and institutional support. The rationales for United States government involvement in the energy sector are many; specifically, the legal and regulatory areas recommended for reform by this Assessment have an economic, political, regional and social impact on Bulgaria and the surrounding region. These are reviewed below; a summary of recommendations follows this review.

### A. The Importance of Energy Sector Reform

Energy sector reform can have a pervasive impact on multiple levels, economic and political, social, domestic and regional. Furthermore, as discussed in more detail later in the Report, the recommended assistance is designed to maximize potential benefit. For example, no donor is currently (or anticipated to be in the near future) offering support to SERC focusing on tariff calculating needs. The National Electric Company (“NEK”), the distribution companies, SERC, the Ministry, potential strategic investors and other donors have all cited the need for help in the accounting, service quality standard and tariff setting areas.

In short, a great deal of good can flow from targeted, cost-effective support. The need is there; every sector participant is asking for it; and significant benefits can come from the assistance. It makes sense to prioritize assistance to the Bulgarian energy sector for multiple reasons.

#### #1: Economic Impact

Generally speaking, the health of the energy sector greatly affects the health of the general economy of country in transition. Energy sector reform thus presents a powerful engine for advancing the goal of overall improvement of the nation’s economy. Rationalized pricing, designed with sensitivity to vulnerable populations, creates economic efficiencies and promotes privatization, with its manifold benefits, including foreign direct investment, tax revenues, introduction of modern operational practices and efficiencies, and increased collections. Improved economics and investment can in turn improve environmental performance, again affecting the economy as a whole and improving the quality of life.

These general principles apply particularly to Bulgaria. Given the existing inefficiencies in the energy sector, deficiencies in the settlement process, problematic collection rates, demand for infrastructure investment, need to import fuel, and the country’s size and strategic location, improvements in the energy sector could have a strong ripple effect across Bulgaria’s economy as a whole. *See infra*, II.A. Helping the regulator to promote and demand a customer-oriented approach from energy providers can set standards to mimic through all service industries.

The recommended assistance would improve the business climate in the Bulgarian economy not only by contributing to privatization to strategic investors and major foreign investment. [SO 1.0], but, through assistance on the replacement law, tariffs and administrative regulations, by working directly to streamline existing business laws and regulations [IR 1.3.1]. Adoption of transition mechanisms to rationalize tariffs would address social impacts, advancing SO 3.4 [Mitigate Adverse Social and Economic Impacts of the Transition].

## **#2: Political Impact**

A competent and autonomous regulatory body that carries out its functions in a transparent way, applies coherent and objective standards, and brings all affected sector participants to the table can provide a model for administrative and political reform. The addition of transparent administrative processes is an important need in Bulgaria. (See 2001 *Regular Report on Bulgaria's Progress Towards Accession*, 13 Nov 2001 SEC (2001) 1744 or "Accession Report," Sec. 1.1 on democracy and the rule of law). Separation of policymaking from administration can de-politicize economic and technical decision-making. Creating the proper background environment for privatization also decentralizes governmental control and separates political activities from sector ownership and operation.

At the same time, the political impact of reform measures such as price-setting is an ever-present consideration that must be addressed. In the case of tariff reform, for instance, government will for reform exists; political constraints, however, require careful, transitional development to avoid popular reaction against the government's reform efforts as prices are raised.

The recommended assistance, with accounting, tariff and other support channeled through the regulatory body, including assistance in adopting and enforcing service standards, will, among other things, increase transparency in the power sector. [SO 2 Key Democratic Systems Work Effectively, Accountable and Responsively; IR 2.2 Transparency & Accountability in Select Public Sector Institutions Increased.]

## **#3: Regional Impact**

The interdependence of domestic energy activities and the actions of Bulgaria's neighbors reflects the importance of creating a market model for Bulgaria that operates within a larger regional framework. Juxtaposed in the Balkans, linked with Russia, and located near Turkey, Bulgaria holds an important strategic place both in gas transit and in the success of a regional electricity market.

Looking at gas, Bulgaria is a major conduit for Russian gas to Turkey. Lacking fuel resources of its own, Bulgaria is heavily dependent on such gas itself, and is currently building up debt and increased dependence on Russia.

Regarding electricity, the Thessaloniki Agreement, flowing out of the Stability Pact, commits Bulgaria and its neighbors to create a regional electricity market (REM) by 2006. This choice to foster cooperation in the region through electricity ties underscores the international consensus that the power sector presents a key arena to resolve security issues, avoid conflict, and grow economic and democratic ties and develop economically. As a practical matter, creating competition in the electricity sector will require a region-wide approach, and regional planning is needed to balance loads to further economic efficiencies.

Harmonizing Bulgaria's energy sector framework with international norms and practices advances the country's progress towards EU accession, with all its concomitant benefits. EU accession is currently under discussion, and an EU accession review emphasizes the need for energy reforms, with regulatory reform a key component. The upcoming EU energy directive encourages additional power sector reforms.

The recommended assistance will leverage ongoing USAID efforts in the region to create the REM and build autonomous and competent energy regulators. For example, significant work is ongoing in Albania, Bosnia, Croatia, and Macedonia to assist nascent regulators and create appropriate legal and regulatory frameworks for the sector. This work is carried out in conjunction with regionally supported efforts of the U.S. National Association of Regulatory Utility Commissioners ("NARUC") to assist Serbia in enacting an energy law and create a regulator, and to develop regional regulatory expertise and cooperation within an Energy Regulators Regional Association ("ERRA"). Other ongoing USAID assistance includes USEA partnerships with regulated entities, along with telecommunications assistance to support the REM. The assistance regulated in this Report is designed to fit within and complement this ongoing effort.

The recommended assistance would assist the Bulgarian power sector in competing in a regional electricity market, providing the opportunity for increased electricity export [SO 1.0, IR 1.2, Private Enterprises in Targeted Sectors Strengthened to Compete in Market Economy]. Support in the adoption and training to utilize internally accepted accounting standards and adopt other western tariff and processing methodologies would also enhance the ability to meet internationally accepted industrial, management and accounting standards. [SO 1.0, IR 1.2.3.]

#### **#4: Social Impact**

Reform in the energy area cannot go forward without due comprehension and consideration of social issues. The overall economic importance of the sector means that the quality of the lives of Bulgarians is directly connected to energy reform. The impact of rationalizing pricing, privatization, investment and improving collection and loss rates must be examined from not only an industry perspective, but also from the viewpoint of the affected general population, particularly vulnerable segments of that population. While improved economics and investment will improve the quality of life for Bulgarians in the long term, the immediate impact of privatization, price rationalization and other reforms cannot be ignored.

Nor, correspondingly, can the political impact, as politicians are loathe to implement changes on a population that resists such changes due to the short-term hardships that reforms present – even when the long-term gains are clearly identified. While the current government supports energy sector reform and price reform, it is hesitant to move too quickly, as sudden and substantial reform may have a short-term negative impact on the population, which in turn would oppose government support of such reforms. Political support can be garnered and sustained by reasoned, transitional, targeted and gradual reforms.

Innovative tariff reform can assist socially vulnerable groups in a targeted manner. Economic criteria that combine tariff expertise with social analysis are necessary. Furthermore, privatization can be carried out in a manner that identifies and addresses unnecessary labor expenses, but provides transitional support to displaced labor forces. Agreements supported by sound economic and social analysis between the unions, governments and investors on funding

and social programs lie at the heart of successful reform.

Given the existing inefficiencies in the energy sector, the artificially low prices of electricity and district heating for household consumers, the social subsidies for district heating consumers during the cold periods in Bulgaria, and increases in unemployment and income inequality, successful reform of the energy sector depends upon consideration of social concerns throughout the reform process.

Two energy reform areas that significantly affect the social life of Bulgarians are rate-making and privatization. As household utility prices are raised to reflect costs and as the process becomes increasingly regulated, transparent, and fiscally sound to support the effective development of the industry, the average Bulgarian will have to pay more money for the utility bill. Similarly, in the first stages of privatization, employees risk losing their jobs. Whereas at present, many industry participants – *e.g.*, state owned entities – over-staff and under-use labor as a form of social safety net, private investors will put commercial profit over continuation of a safety net that restricts commercial expansion.

The recommended assistance would improve the social impact of reform on Bulgarians not only by addressing essential economic problems in the long-term through developing privatization and foreign investment, [SO 1.0]. It would, through assistance on rational transitional tariff and rate-making, coordination with other donors and non-energy government sectors, and advancement of privatization efforts accompanied by employment and labor analyses and fair severance packages, address social impacts, advancing SO 3.4 [Mitigate Adverse Social and Economic Impacts of the Transition].

## B. The Scope of the Task Order and Summary of Recommended Assistance

The Task Order identifies five areas for potential USAID support:

1. Improving the Energy and Energy Efficient Act (hereinafter the “EEEA”);
2. Modernizing and rationalizing tariffs and prices in the electricity sector;
3. Identifying proper accounting standards;
4. Strengthening the State Commission for Energy Regulation (“SERC”);  
and
5. Providing privatization assistance.

The recommendations herein include targeted support affecting all five areas. Specifically, we recommend a two-tiered approach:

- (1) *assistance to the Ministry of Energy and Energy Resources to develop the new law replacing the existing law on energy*; concurrent with
- (2) *assistance to the State Energy Regulatory Commission*, including:
  - (a) establishment of appropriate information gathering processes, application of international accounting standards, and staff training on proper processing and use of the collected accounting information;
  - (b) related help in translating the collected information into use in rate-setting, including preparation of any needed tariff regulations, both substantive and procedural; and

- (c) other overarching and focused institutional support, including training and protocol, procedure and practice development; identification of service standards; sustainability; adoption of dispute resolution mechanisms; and/or participation in regional cooperative efforts.

Assistance to MEER in developing a new or redrafted energy law is imperative and ideally suited for USAID assistance. Areas of needed improvement to the law include: establishing regulatory autonomy and competency; reduce centralized planning by adopting the authorization process and using the tender process when supply is threatened; defining the market opening, harmonizing the law with EU requirements and simplification or clarification of provisions to increase the law's accessibility to the public. MEER is committed to producing a new or redrafted energy law in the short term future, no working group has been established to achieve this end, and no other international donors are committing consulting or financial assistance on the law. (#1) should optimally begin no later than May 2002 and continue through the end of the year.

Strengthening of SERC is key to reform of the energy sector. In January 2002 SERC assumed price-setting responsibilities for the first time. It is procedurally, technically and substantively unprepared for tariff reform, lacking tariff methodology, appropriate accounting methodology, knowledge of existing standards, and capacity to implement such standards. The majority of its seven Commissioners are new to SERC, lack regulatory experience, and regulatory independence is unfamiliar to Bulgaria generally. SERC is receptive to receiving assistance in these areas and MEER is supportive of efforts to promote SERC independence, autonomy and capabilities. The Minister of Energy has a sound grasp of energy issues and existing problems within the sector, and placed regulatory reform as a priority area for assistance. Other donors such as the World Bank and EBRD are providing large funds to the energy industry with the goal of promoting privatization, and the effectiveness of such funds and efforts can be enhanced through USAID technical assistance in the area of regulatory reform.

The recommended SERC assistance work (#2) is comprehensive and could be sequenced in various ways, starting when feasible, beginning with one or two subject matters (e.g., accounting/service standards) and building from this core.

Such an approach would achieve the greatest results in the most cost-effective manner, promoting progress on the dual fronts needed to achieve real reform: a proper legal and regulatory framework, implemented in a coherent and predictable manner. The recommendations are designed to work in conjunction with ongoing and anticipated assistance from other donors for leverage, and to provide flexibility over time to respond to changing demands for optimal benefit.

### **C. The Scope and Structure of this Report**

The Report contains: this Executive Summary; an Overview of existing conditions influencing reform efforts; an Analysis of each of the five areas for potential assistance; Recommendations for future USAID assistance; and an Annex with various Appendices.

In arriving at the conclusions discussed herein, all segments of the energy sector were reviewed and assessed. Aside from its past experience in World Bank assessments of the EEEA, and its understanding of the Bulgarian situation in context from regional efforts and assistance in other countries in the region, the Assessment team draws upon the over 45 meetings it has held in



preparing this Report. *See* Annex V, Appendix 2. Communications with USAID occurred on a daily basis to assure that the Report meets the USAID goals. In addition, the Assessment team met and spoke with representatives of the World Bank, the European Union, the European Bank for Reconstruction and Development (EBRD), and other donors. Statistical data and reports from a variety of sources were reviewed as set forth in the Annex.

## II. OVERVIEW

The following factors affect the desirability and potential impact of USAID assistance in the sector generally.

### A. Energy Usage and the Economy

From 1989 to 2000, the GDP in Bulgaria fell as compared to the preceding period by almost 30 percent. The first three years saw sharp economic declines, followed by a brief gain and another sharp decline from 1996-97. Since 1998, stabilization and structural adjustment policies have led to 11 percent increases in GDP from 1997-2000. Recent projections indicate real GDP growth in 2001 will be 4 to 5 percent. In this respect, the overall economy continues to grow. But unemployment is high and increasing, and the proportion of vulnerable persons in the country is increasing.

The existing room for improvement in the energy sector demonstrates a potential for reform with significant results affecting the economy as a whole. For example, Bulgaria has one of the highest energy consumption levels in the region per unit of GDP. For instance, energy indicators for 1999 report an electricity consumption rate of 29.82 TWh (calculated as gross product + imports – exports – transmission/distribution losses) and an electricity consumption per population rate of 3633.28 kWh/capita. When compared with other countries in the region (defined as South Eastern Europe and the Balkans), Bulgaria's electricity consumption per population rate is the second highest. (First is Turkey with 4409.44 kWh/capita, but with a correspondingly higher GDP.) All other countries in the region have significantly lower consumption rates per capita. Bulgaria's consumption per capita rates are also high compared with countries of the former Soviet Union – only Russia has a consumption per capita rate in excess of Bulgaria's rates, but of course it, like Turkey, has a far higher GDP. Figures for the United States and Central Europe show consumption rates per capita that hover around Bulgarian rates, but the GDP is substantially higher. *See* Annex V, Appendix 10.

Energy issues have a ripple effect on the economy, with consumption levels directly linked to areas needing reform. High use of electricity for heating is in part due to highly subsidized prices of electricity for household users. At an average household electricity price of 3.8 cents/kWh, electricity is significantly less expensive for the user in Bulgaria than for users in the countries of the European Union. *See* Annex V, Appendix 11A & B. Other reasons for excessive consumption include a district heating system that is technically inefficient, subsidized and state-owned; limited co-generation; and lack of efficient natural gas burning facilities and a low pressure network.

### B. The Need for Investment

The Government has developed medium term (2001-06) program, set forth in the *Management Plan of the Government of Bulgaria*, that includes an ambitious investment program. *See* Annex

V, Appendix 11. Therein the Government defines its energy reform goals: “Establishing conditions for liberalization and competition through cost-relative prices and abolishment of the cross-subsidizing with a pace that takes into consideration the power purchase of the consumers and the improvement of inefficiency within the sector, attraction of the strategic investors, and establishment of a clear regulatory framework.” The investment program includes 1.45 billion Euros in rehabilitation and environment-related expenditures, covering Kozloduy Nuclear Power Plants 5 and 6 (about 400 million Euros), Martitsa East Thermal Power Plants 2 and 3 (about 400 million and 220 million respectively), Varna Thermal Power Plant (280 million Euro) and the transmission network (about 150 million Euro). Another 1.25 billion Euro is directed for electricity plants (600 MW of lignite-based capacity at Maritsa East and 160 MW hydro capacity in the Gorna-Arda cascade). These needs underscore the importance of successful privatization, which in turn requires a clear legal and regulatory framework and a competent and autonomous regulator.

The Hungarian experience provides one stark example proving this point. In need of funds to balance its budget, the Government of Hungary attempted to privatize various electricity assets before enacting an energy law and creating a regulatory body to oversee the sector. The privatization failed. Investors were not interested in participating in a sector requiring expensive and immobile capital expenditures without the establishment of a predictable legal and regulatory framework. Parliament then passed the Energy Act and created the Hungarian Energy Office, and the Government launched a new privatization effort. A highly successful, \$6 billion sale of generation and distribution assets ensued.

Providing further lessons, however, the Hungarian legal and regulatory framework did not anticipate the competitive market required for participation in the European market. Having committed to various long-term power purchase contracts, the Government of Hungary is now addressing the stranded costs created in reliance upon the previous framework.

Thus, privatization is needed to obtain infrastructure improvements (and associated managerial expertise); and attraction of strategic investors requires a clear legal and regulatory framework that works predictably but flexibly.

### **C. Social Considerations**

Although Bulgaria’s economy continues to grow steadily, it faces significant social problems resulting from increases in unemployment and poverty and deteriorating state-run support systems. These issues are critical to any analysis of energy reform. Tariff and rate-making reform, privatization and efficiency gains cannot be achieved without addressing the social costs. Social analysis must play a key role in price-setting reforms; the two should be seen as mutually enhancing rather than separate considerations. Economic analysis requires analysis of targeted social assistance, *e.g.*, via innovative and transitional tariff structures for vulnerable groups and privatization plans that include benefit or retraining provisions for displaced workers. Such an approach to energy sector reforms addresses the needs of the Bulgarian population and attracts political and popular support essential to their success, while incorporating sound economic principles.

For the past several years, the average real income of Bulgarians has declined, while income inequality and unemployment have increased. During this period, as with previous decades, utility prices for households were set by the government, under its former structure as the State Agency for Energy and Energy Regulation (“SAEER”), at levels far below cost. While

commercial consumers and industry paid (and continue to pay) a fee approximating costs, bills for individuals were (and continue to be) rated differently. The most significant of such price realignment in terms of amount and persons affected is heating subsidies for households. With the exception of a brief and troubled attempt in October of last year (when prices were raised, lowered in response to consumer criticism and raised again) and December (when prices were lowered by court order, pursuant to union protest, and then raised by court order), prices for heating have remained untouched for the past two years, while costs have risen significantly. At the same time, household consumers receive energy subsidies during the winter months, statutorily set at November 1 through March 31. These are small in amount, but reflect great need of the poor in Bulgaria to receive heating assistance during the often bitter cold of the Bulgarian winter.

Also during this period, as with previous decades, industry sectors, such as the coal mines, employ far more persons than economically efficient or needed. Such employment, under government managed programs common in the Soviet system, provided a form of support and security – albeit, quite low – for many working class Bulgarians. Over the last few years, unemployment has steadily increased (from 12.8 percent in 1994 to 17.9 percent in 2000), and thus, such industry jobs are all the more valued. Privatization inevitably brings layoffs in the short term, although, by stimulating the economy, it brings jobs in the long-term. Still, the short-term impact must be examined and terms of privatization must incorporate assistance to displaced workers; otherwise, the overall economy will suffer and, due to political resistance, privatization may fail.

Now, when the EEEA has committed to raising prices, with SERC tasked to set cost reflective rates (the final December rise in rates left a ten percent increase, currently in effect) and the Government has committed to the first wave of privatization of the energy sector (targeting distribution companies for 2002), the social impact of such efforts cannot be ignored. Paying utility bills – particularly heating bills in the cold winter months – is a challenge for a growing number of poor households (17 percent of which use district heating as the heating mechanism; the remainder use wood, coal and electricity). Women and children face a disproportional impact. They make up the highest percentage in the low economic rungs but receive an ever diminishing amount of financial and other forms of support from the government as the Soviet style assistance is reduced. Moreover, women (often mothers) and children make up a increasing percentage of the rising number of unemployed – a fact that becomes all the more dire as privatization efforts move forward.

Politically, changes in rates and privatization cannot move forward smoothly and successfully, and perhaps at all, unless measures are taken to reduce the immediate burden placed on the population. A good example is the failure of the government to consult the public and, specifically, the labor unions in September 2001 of its plan to raise rates in October 2001 by 10 percent. Popular protest ensued, and the increases were removed; when the government attempted to raise rates for the second time, popular protests – through strong union activities – resulted in court intervention. The court nullified the increase, requiring consultation with the labor unions before another increase. Only in late December 2001, after the government consulted with the labor groups, was an increase (that has lasted for longer than 2 weeks) put into effect. As these efforts to raise utility prices demonstrate, political intervention is one way for the public to influence reform efforts. If political concerns stemming from social issues are ignored or underestimated, the government may soon be out of office, and key reforms in the Ministry of Energy and SERC may be lost as new persons assume power.

Assistance must focus on how to take such measures, while protecting the integrity of the price-making, regulatory and privatization process and coordinating efforts with other donors. Subsidies must be targeted for maximum economic benefit. Most importantly, energy efficiency must be implemented in the sector so that the government can optimize and target responsibly the use of its limited resources.

#### **D. Stumbling Blocks to Reform**

Restructuring efforts began in earnest in 2000, but slowed significantly in the second half of 2000 and in 2001. While, as noted, potential exists for efficiency gains, the solutions are not easy because Bulgaria:

- Relies disproportionately and at a high cost on electricity;
- Lacks a natural gas supply for non-industrial consumers;
- Lacks economical and environmentally sound energy resources (it has lignite, but this is environmentally unsound; it lacks natural gas and the current exclusive source is Russia; and units in its nuclear plant are slated to close because of outdated and potentially unsafe design);
- Relies on export markets that are now expanding their own generation capacity, diversifying and therefore no longer captive to Bulgaria's supply; and
- Suffers from an inefficient and nontransparent settlement process inviting and experiencing economic losses through corruption and other inefficiencies.

Moreover, identifying with precision background data necessary for analysis of the sector and structure of necessary reforms is a challenge. The restructuring process and outdated management systems result in limited and scattered data availability, requiring concerted data gathering efforts.

Despite such barriers, in the effort to meet international requirements for EU accession, and other reasons, including an apparent genuine desire to progress, Bulgaria is committed to achieving reforms. Bulgaria is planning substantial changes to be accomplished in a record short period of time. But many plans are unrealistic, and industry participants express concern that rapid reform may produce ill-considered or ineffectual changes.

Assistance should focus on areas in which change is needed; from a realistic perspective, progress can be made; and maximum benefits will result.

#### **E. The Existing Legal Framework**

The energy sector is currently governed by three basic guiding documents: (1) the National Strategy for Development of Energy and Energy Efficiency until 2010; the (2) Action Plan for the period 1998-2001; and (3) the EEEA.

The Government is currently preparing a new National Strategy on energy issues; SERC has drafted new tariff methodologies and is preparing ordinances on third party access to be ready in the first quarter of 2002; and MEER hopes to replace the existing EEEA with a new energy law in the second half of 2002.

#### **F. Sector Ownership and Structure**

## 1. Electricity

In accordance with the EEEA, NEK has legally unbundled into seven distribution companies, six generation companies and a transmission company. Currently remaining within NEK itself is the transmission company, a transmission system maintenance division, the National Dispatching Center, the hydro-facility system,<sup>1</sup> and Maritsa East 3. NEK carries out all electric power purchase and sales on the high-voltage level.

This structure is important to the analysis, because, among other things, it shows that NEK will remain a powerful entity in need of transparency among functions.

With some generation and the distribution (medium and low voltage) companies now legally unbundled from NEK, privatization of the distribution companies is targeted for 2002 and the generation in 2003. There are seven distribution companies. The IPPs are: the nuclear plant, Kozloduy; Maritsa East 1 (Thermal Power Plant, “TPP”); Maritsa East 2 (also TPP); Varna (TPP), Bobovdol (TPP); Maritsa 3 (TPP); and Russe (TPP). Maritsa East 1 (TPP) has been formally merged with the briquette factory under the name Brikel, and Russe (TPP) has been merged with a heating company under the name Toplofikatsia Russe.

## 2. District Heating

There are twenty-one commercial enterprises operating in different towns and villages, out of which 20 are 100 percent state-owned and the biggest one – joint-stock company District Heating-Sofia – is 100 percent municipally owned. These enterprises supply heat to more than 570 thousand households with more than 1,550,000 inhabitants, which amounts to about 18 percent of the population. The public buildings supplied are with total volume equal to 240 thousand standard apartments. District Heating-Sofia supplies heat to more than 350 thousand households with approximately 950,000 inhabitants and public buildings with total volume equal to 150 thousand standard apartments.

The annual average heat power generation varies within 10-12 billion kWh heating power and 1.8-1.9 billion kWh electric power produced through co-generation. In this generation process the enterprises burn around 1 million tons of coal, 130-160,000 thousand tons of heavy oil fuel and 1,4 billion normal cubic meters natural gas.

Fourteen of the twenty-one district heating enterprises are subsidized out of the state budget; subsidies for the other seven were terminated as of 7 January 2001, in accordance with an agreement with IMF.

## 3. Gas

Production of natural gas in Bulgaria is negligible (less than 1 percent of total consumption, although due to rise to 7 percent when the Galata offshore field comes on stream in 2003). Natural gas accounts for less than 20 percent of energy consumption. Demand fell in the 1990s both in absolute terms and in terms of its share of total energy consumption.

Bulgaria acts as a major transit area for Russian gas, however. Bulgargaz owns the only transit

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<sup>1</sup> These are four large hydro cascades (14 plants with a total capacity of 1637 MW) and the Chaira pumped storage hydro-plant (864 MW of generation and 784 MW of pumping capacity).

pipeline to supply Russian gas to Turkey, Greece and Macedonia.

Starting in 1998, Bulgargaz entered into long-term take-or-pay contracts with Gazprom. The amounts taken increase over time, precipitating a desire to use the gas by expanding underdeveloped local gas distribution at the residential level. Studies are underway on Bulgargaz restructuring and how to develop this sector. Bulgargaz recently underwent accountancy separation. The general strategy is to maintain state ownership on the transmission and storage levels, while separating, selling and developing local distribution through private ownership.

#### **4. Coal**

Twenty-two enterprises currently exist. Thirteen operate in coal production, reprocessing and sale; six are in the process of liquidation; and three are in bankruptcy. The thirteen coal producers utilize twenty-one coal mines, with three on the ground and the rest underground. Maritza East coal mines exploit the East Maritza coal basin, which is the largest lignite coal deposit in Bulgaria. The coal is used for electricity generation and for production of briquettes in the TPPs and a briquette factory next to the mines. These mines produce over 80 percent of the coal produced in Bulgaria, which, in turn, is used to generate almost 40 percent of the country's electricity.

Restructuring in the coal sector is ongoing. On 19 June 2000, the Council of Ministers adopted an action plan incorporating liquidation of the failing mines or parts thereof, and privatization of the rest. Reserves in operating coalmines as of 1 January 2001 amount to approximately 2.2 billion tons, most of which is lignite.

#### **G. The Electricity Market**

The EEEA is silent on the market models chosen by Bulgaria. In practice, in electricity it uses a single buyer (NEK) approach, although it does not function as contemplated in the EU Directives, since there are as yet no eligible customers to seek facilitation of their transactions through the single buyer; NEK simply contracts for all power, and everyone is a captive customer. Consistent with the 13 March 2001 proposals to amend the EU Directive, this model should migrate toward regulated third party access. Decisions need to be made as to what functions will remain in NEK (*i.e.*, whether dispatch and marketing functions should remain within the company); and the timetable for change.

#### **H. Corruption Issues**

The Accession Report for Bulgaria highlights the need to reduce corruption (*e.g.*, p. 19: "corruption continues to be a very serious problem.... Corruption continues to be considered as one of the main problems facing Bulgarian society."). This observation highlights, among other things, the need for transparency and the importance of process, as well as content, reform. For example, the end product – *e.g.*, a tariff – is important; but so is the process by which the tariff is adopted. Similarly, the governance arrangements for system and market operations can be as important as the commercial codes and market rules ultimately promulgated.

Technical and commercial losses in electricity and heating are high in Bulgaria, hovering around 20 percent. *See* Annex V, Appendix 9, reviewing loss and collection rates in both sectors, across regions and over different time periods. In interviews with MEER, district heating, distribution company and NEK representatives, the Assessment Team learned repeatedly that the high rate

of losses was attributable in part to old and inefficient technology, and in larger part due to corruption. Bills are based on reports made by individuals whose job it is to read meters. Corruption in this process (such as bribes to report lower usage than that recorded in the meter; and physical manipulation by the user of the metering system, which is most often located in the user's residence and thus entirely within the user's control) result in high loss rates. Corruption occurs in the reading and reporting process, not the collection process (with collection rates running in the 80 percent range for district heating and 90 percent range for electricity), as collections are handled through bank transfers for amounts based on billing, and do not involve reliance on human reporting or disclosure of information by the user. *See Annex V, Appendix 9A & B.*

Increasing SERC autonomy in the replacement law, funneling accountancy, tariff and other assistance through SERC and with a regulatory-focused perspective, creating transparent regulations and systems, and providing training to SERC staff to increase SERC competency are all strategies that attack this problem.

## **I. Energy Subsidies – Direct and Indirect**

The improvement of social assistance for energy is essential to facilitate the introduction of cost-based energy prices, abolishing the subsidies to the producers and for the market orientation and privatization of the energy sector. The current system of subsidies is inefficient and ineffective, as it cripples the industry and also fails to provide adequate assistance to vulnerable populations. Targeted, innovative tariff reform that uses sound economic price-setting analysis combined with statistically strong social analysis can ameliorate the existing difficulties with subsidies, while preventing social upheaval and unfairness as SERC fulfils its new price-setting functions.

As discussed, utility prices for households – heating and electricity – are set at lower levels (and far lower than estimated cost) than prices for the commercial users and industry. *See Annex V, Appendix 11A* for heat and electricity prices. This is one form of subsidy, as prices collected from commercial users and industry users subsidize the households.

In addition, the Social Aid Act and Decree for the Application of Social Aid Act provide separate social assistance for poor households (approximately 630,000 families, rated by statutorily defined minimum income levels) in the winter season, which spans from November 1 to March 31. A strict formula determines the amount of the authorized heating subsidy per family. It is based on (1) the guaranteed minimum income ("GMI") (defined as of March 2001 as 40 BGL per month per person); (2) the family monthly income ("FMI"), *i.e.*, the total income of the family per month, calculated on the preceding month; (3) the differentiated minimum income ("DMI") which raises or lowers the GMI based on need (adding a multiplication factor of 0.9 – for a healthy middle age adult – to 1.5 – for a child or elderly person); (4) the family differential income ("FDMI"), *i.e.*, the sum of the DMI of the members of the family; and (5) a currency equivalence of electricity ("CEE"), now set at the day price for 300 kWh, in addition to the night price for 150 kWh, for a total equivalence of electricity, set at 37.35 BGL.

The actual amount of heating assistance is negligible given that the average monthly income is approximately 260 BGL, the GDP per capita is approximately 3100 BGL, and unemployment hovers around 17 percent. Under the current formula, aid during the winter season = (FDMI + CEE) – FMI. For a family of four with a family income of 210 BGL (not an uncommon amount among the poor population), the FDMI is 4.8 (0.9 x 2; 1.5 x 2), the DMI is 192 BGL (4.8 x GMI), the electricity guarantee is 229.35 (192 + CEE). The actual subsidy comes to 229.35 – 210

(FMI), for a total of only 19.35 BGL per month. This amount goes directly to the family, unless the family lives in a building with central heating.

Where the family has central heating in the building complex, the family does not receive the subsidy directly; instead, the total amount of CEE is transferred to the corresponding district heating company. The reasoning supporting this distinction is that consumers in central heating buildings will (and do) disconnect their heat or reduce consumption significantly because, under the central heating system, they can receive limited heat from surrounding apartments. Those without central heating have no such ability, and are unlikely not to use money for heating given the harsh conditions in Bulgaria during the winter. In all cases, the families are responsible for paying the remainder of the bill.

Corruption runs rampant in the system, from the process of municipal distribution of money to the companies, to provision of direct assistance to families, to recording and collection of expenses. Energy inefficiency, combined with poor metering of heat and lack of allocating instruments lead to inaccurate subjective pricing and collection practice that exacerbate the social problems.

With respect to employment, the industry employs persons it does not need in order to provide a social safety net. Such employment operates as an indirect subsidy, providing salary (albeit low), benefits and security to many unnecessary workers, untrained in other skills.

The 2002 budget anticipates subsidies for the district heating companies in the amount of 40 million BGL. This is a sharp decrease from 2001, when the amount was 55 million BGL and 2000 when the amount was 70 million BGL. At the same time, the government has indicated that it will allocate approximately 90 million BGL to energy protection and financial support of the poor. The government also will require consumers to install metering and allocating devices that will measure use in more reliable manner, thereby reducing corruption, loss and miscalculation. The goal of such redirection of resources is to liberalize the energy market by decreasing direct heating subsidies while providing some economic support to the persons in need.

These changes are steps toward rationalizing prices while addressing some social impact issues. Reducing heating subsidies strengthens the industry by bringing rates closer to cost. Investing in heat metering, allocating and regulating devices brings integrity to the pricing system, thereby reducing fraud, corruption and inaccuracy. Direct subsidies to the needy without artificially setting heating prices unreasonably low will allow more consumers to reconnect and increase consumption.

How to pay for the reforms, however, remains unanswered, both with respect to the government's commitment to place funds directly for social assistance and with respect to consumer's ability to pay for improved measuring devices. Among other missing improvements are bringing the GMI to the minimum needed (approximately 100 BGL according to independent sources); increases in the currency equivalence (now at 450 kWh; but with an estimated minimum need of 700 kWh in the winter months), and socially directed limits that accompany privatization. These are only a few of the considerations, however.

Identifying the appropriate method type of subsidy, if any, is difficult and country specific. In Bulgaria, there is a clear need for an assessment on that specifically addresses the impact of utility – with focus on heating – prices, subsidy mechanisms, utility collection rates, and household expenditure and incomes on the economy and on the poor, women and children. It



must also address indirect subsidies of employment for unnecessary workers, developing a plan for transitional support in the event of downsizing, or retraining. As the reform process moves forward, price setting structures, regulatory strengthening and privatization will require social impact analysis. Additionally, energy efficiencies must be applied in a way that prioritizes alleviation of hardships in vulnerable populations.

## **J. Activities of International Donors**

Another component guiding this discussion is the ongoing and future efforts of other donors. Any assistance provided by USAID should be leveraged and coordinated so as to combine to advance common goals with maximum efficiency.

Discussed herein and also included in the Annex, Appendix 5 is a MEER-provided list of the current plans and projects of other donors and lenders that could affect the analysis of potential assistance in the five task areas discussed in this Report.

## **III. ANALYSIS**

Set forth below is a discussion of each of the five areas the Task Order asks to be examined. In reviewing this analysis and the specific recommendations that follows thereafter, timing and the need to coordinate activities within each area must be kept in mind. Assistance should not only be coordinated among donors, but the reforms advanced should be sequenced in a rational and effective manner.

For example, ideally, privatization should occur after the legal and regulatory structure has been established, in order to (a) avoid the problem of stranded costs and (b) maximize the interest in the privatizing assets. On the other hand, one cannot wait until the legal and regulatory framework is perfect before selling assets; indeed, the inclusion of new strategic investors could provide a jumpstart to progress in the sector on other fronts.

### **A. Improving the Energy and Energy Efficiency Act**

The EEEA was enacted in 1999 and amended in December 2000. Before the EEEA was originally enacted, the World Bank, USAID and other donors and entities have made various suggestions to: bring the Act into harmony with the EU Directives; clarify the role of each sector participant; increase SERC autonomy; and provide a clear blueprint for rationalization, modernization, and privatization of the sector, including the creation of active, competitive markets. Assessment Team interviews underscored several areas of concern for industry participants. Key areas cited for reforming the EEEA include:

- Insufficient segregation of responsibilities of the MEER and SERC
- MEER's control over the energy sector and lack of SERC autonomy, *e.g.*, SERC dependence on the state budget (*See Accession Report*, p. 66: "The status and the resources of Bulgaria's regulatory authority should be further strengthened in the short term and its independence should be guaranteed.")
- Unfair allocation of heating costs between household and industry consumers
- Non-compliance with the EC Directives 96/92 and 98/30 (*See Accession Report*, p. 65)
- Insufficient commitment to energy efficiency

- Failure to define “energy supplier” to allow generators to purchase electricity
- Strict separation of the Hydro Power Plant (“HPP”) and the dam, rendering bidding for HPP with the dam and reservoir impossible.

While the December 2000 amendments were slated to address many of these points, only a few relatively simple, but nonetheless important, reforms were incorporated at that time: creating the Ministry of Energy and Energy Resources (subsuming the previously established entity, SAEER); abolishing the import monopoly of the gas company Bulgargaz; concentrating some regulatory functions and authorities and raising Commissioner salaries at SERC; and facilitating the commercialization of the district heating cost allocation.

More global improvements were basically postponed, with the intention to elaborate a new law sometime in the second half of 2002. Thus, the question now presented is less how to improve the EEEA than whether assistance should be provided in drafting and enacting the replacement act. No donor appears to be focusing on direct assistance in this area. Because the new act will be the overarching legal framework onto which all other legal and regulatory acts must hang, and will create the parameters for sector operations as a whole, it is crucial that the law be coherent, consistent with EU requirements, and advance rationalization and modernization of the sector. Areas in which a replacement law could improve the EEEA include:

## **1. Regulatory Autonomy and Competency**

Within clear but broad parameters, the regulator should apply its discretion to reach non-politicized, predictable results. Discussions with representatives of regulated entities have expressed the need for predictability and consistency in the actions of the regulator. Such predictability comes from a two-tiered situation: (1) a clear legal and regulatory framework, and (2) implementation by a competent and autonomous body.

Provisions still needed to promote SERC autonomy and competency include control over its budget – independence through sound treasury function and the ability to control itself through sector fees and licenses;<sup>2</sup> ability to issue its own rulemaking<sup>3</sup>; authority to take various administrative actions;<sup>4</sup> and higher staff salaries.<sup>5</sup>

## **2. Decreased Centralized Planning**

Throughout the region (and elsewhere), governments have been reluctant to give up their control over new investment planning. Any momentum gained in this area was discouraged by the California experience. The subsequent recognition, in accordance with French concerns, of security of supply issues in the 13 March 2001 proposals to amend the EU Directives, demonstrates the re-invigoration of this priority, and the view that some government retention of control is necessary.

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2 In the December 2001 amendments, SERC was raised from a secondary to a primary authorizing body (Art. 11(1)), but must still obtain approval of its budget from the Ministry of Finance. While the amendments eliminated the reference to SERC being financed by the state budget, they did not indicate that the budget would be set through licenses and fees. (Art. 11(2).)

3 Currently, SERC must propose ordinances, requiring approval from the Council of Ministers. A change in this arrangement could have a significant impact on increasing SERC independence.

4 See, e.g., Article 45(1)(6) on information gathering, requiring a licensee to provide information to MEER, not SERC.

5 The December 2000 amendments increased Commissioner salaries, but not salaries of staff members (Art. 11).

Security of supply is critical. But, as elsewhere reflected in the 13 March proposals, governmentally controlled investment (*e.g.*, tenders) should be used only as a last resort. Security is increased when the overall sector environment encourages free and private investment. Such encouragement flows out of the minimization of limits (*e.g.*, choice of fuel, location etc.). A merchant plant increases security of supply by placing a resource in-country, while avoiding the assumption of costly long-term contracting – risk remains with the plant investor, not the government supporting or guaranteeing the contracts obtained in a tender process.

The EEEA as amended still requires use of the tender process for new capacity. (See Articles 4, 36 and definition 54.) The replacement law to the EEEA should change this and reduce obstacles to free investment in new generation. The authorization process should be used, with tendering only when national policy goals are not being met and security of supply is threatened. Distribution companies should be deemed eligible customers, and long-term contracting reducing SERC autonomy and competitive markets discouraged. These provisions affect both the electricity and gas areas, as the existing exclusive competitive tender process hinders, for example, development of local gas distribution networks.

A similarly counterproductive provision requires all generators, as well as transmission and distribution companies, to prepare long-term demand forecasts. There is no logical reason why such plants should engage in this activity, particularly those who will only serve eligible customers.

Also emerging as a significant obstacle to investment is the proliferation of permits an investor must obtain to locate plant. In Slovenia, these amount to literally hundreds of different approvals. The Croatian situation is somewhat similar. The World Bank is currently attempting to address this issue in its assistance on the draft concession law, encouraging the “one stop shopping concept.” (See also Accession Report, p. 16, noting that, after a decision of the Council of Ministers in June 2000 on measures for the improvement of administrative services to the public, a pilot project to organize services based on the one stop shopping concept has begun in six local administrations.) Similar efforts could be included in the EEEA replacement law to provide active assistance to a potential investor, and streamline the processes that investor must undertake to build its plant. We were informed that currently 14 different approvals are needed merely before a household resident can be served by natural gas.

### **3. Market Opening and Other EU Harmonization**

The issue of market opening has been delayed, deferred from the EEEA to an ordinance on third party access due in March 2002 and the eventual broader replacement law. The EEEA now sets a timeframe of 2007 for establishing cross-border competition, but does not include the pathway for arriving there. The law needs to spell out how the market will work.

The Government is currently working on the Strategy which will address market opening issues. SEETEC (funded by the Canadian government, “CIDA”) is providing some assistance in the preparation of the TPA ordinance. The principles included in the Strategy and ordinance must then be translated into the law.

### **4. Simplification**

The EEEA is currently lengthy and covers all aspects of the sector, *e.g.*, gas, district heating and so on. Aside from creating clarity through identification of each sector participant’s role (what

exactly does SERC do; what does MEER do; what will the Market Operator do, and so on), from a practical perspective it may make sense to shorten and simplify the Act, and/or break the law down into small, more easily digestible components.

## **B. SERC Introduction of Modern Electricity Tariff Methodologies**

Currently all prices are regulated in the sector. The authority to set tariffs was transferred from the Ministry to SERC at the end of 2001. Three tariff methodologies (for gas, electricity and district heating) have been prepared by SERC and are before the Council of Ministers for approval.

These pending methodologies are based on historical costs. SERC has been tasked with preparing a pricing strategy to the Council of Ministers in the next few months that proposes how to move to more rational pricing. This includes a discussion of how to change methodologies from the historical cost approach to modern, western methodologies (*e.g.*, marginal cost pricing, price caps and productivity offsets), and a proposal as to how to eliminate subsidization. No donor is assisting in this task. Nothing in the tariff methodology ordinances pending before the Council of Ministers establishes any formal protocols or processes for SERC's procedures in setting rates.

The Assessment Team found several consistent recommendations by industry participants:

- Gradual elimination of cross-subsidies between household and industrial/commercial customers
- Elimination of energy price subsidies to vulnerable or low-income populations, while providing protection to such populations through social assistance mechanisms and transitional rate-making
- Transparent tariffs for transmission and system services
- Non-discriminatory third party access to the network for import and exports
- Domestic and export price inclusion of environmental efficiency and operation costs, such as reserve capacity and regulation
- Inclusion of environmental compliance and system operation costs (such as costs of reserve capacity and regulation).

In sum, in order to function well, both as an internal market and within regional markets, the tariffs applied in the Bulgarian electricity sector must be prepared to allow the market to develop. While NEK has been disaggregated, it will remain powerful. Clear, non-discriminatory tariffs, balancing and settlement mechanisms and market rules will be required to effect achieve open third-party access.

If eligible customers – who will increase in number over time – are to have a real choice of suppliers, fair connection and wire usage fees must be established. The situation in Romania – widely seen as one of the more successful examples of re-structuring in the South East Europe region – underscores the need for real reform. While Romania has opened its markets on paper, the pricing regime and other market limitations restrict actual competition. Similar difficulties exist in Bulgaria – competition will not occur while long-term contracts monopolize the market. The pricing regime must be simple, avoid discriminatory or pancaking charges, and facilitate and encourage not only a vigorous internal market, but rational import and export as well.

Second, prices must be rational, *i.e.*, incorporate the costs of production (including appropriate environmental costs), with a reasonable rate of return on investment. Cross-subsidies must be eliminated. At the same time, care must be taken to address social issues, and to develop “Lifeline” supports that provide a safety net in the most economically rational manner.<sup>6</sup> Significant progress has been made to phase-down price subsidies, with targeted protection of vulnerable populations.

As discussed above, the Social Aid Act and the Decree for Application of the Social Aid Act currently authorize limited social support to low-income or vulnerable energy consumers during the winter season. Assistance is divided into two categories, low-income families without central heating and low-income families using central heating. The first, using an income and need rating and multiplying factor, provides direct, but low, financial assistance to the individual or family in need. The second, using this same system, transfers the calculated amount to the district heating company directly.

Such efforts should continue, within an administrative framework that brings all affected groups to the table, in a transparent, and non-political an atmosphere as possible. In the meantime, a concerted analysis of assistance options should be done. To identify the subsidy mechanism that best addresses the circumstances in Bulgaria, decision makers (of which SERC is only one) need to obtain clear information regarding: (1) the kind and ratio of utility services used by vulnerable groups; (2) methods to measure (current and potential improvements) household consumption; (3) possible subsidy mechanisms and how attempted mechanisms have succeeded or failed in this country and surrounding countries; and (4) subsidy criteria such as coverage, targeting, benefit, side-effects from price distortion and administrative burdens. Exploration of such issues and incorporation of social principles in rate-making and tariffs analyses and decisions will provide socially responsible assistance to individuals and smooth the path for energy reform.

Third, the fundamental elements of modern tariff methodologies should be followed. This means that, when calculating the core cost of production rates, marginal cost pricing should be used. It also means that price cap and performance based components (some form of RPI-X, with a set of service standards) should be incorporated. The need for a performance based element is crucial not only to bring productivity gains to the sector and mimic the impact of competitive forces in monopoly service areas (transmission and distribution, and supply to captive customers), but to give the regulator an effective tool for enforcing its dictates.

Fourth, appropriate pricing signals should be incorporated in tariff structures not only for the providing entity through performance based rates, but to consumers and other affected entities. Rationalization of electricity use would thus support some sort of incremental block pricing, with prices rising sharply after a first block, core usage level. Similarly, open access transmission rates must incorporate components reflecting bottlenecks without discriminating against new entrants. Providers should be given pricing flexibility to obtain contributions from elastic customers without driving them off the system in uneconomic ways, while not discriminating against providers serving only eligible customers.

Fifth, a primary way to encourage efficiency use of energy is through cost-based pricing (noted as crucial in point #2, *supra*), coupled with focused, reasonable and cost-based energy saving mechanisms, such as interruptible rates and targeted demand side management programs. Given

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<sup>6</sup> See Maintaining Utility Services for the Poor, World Bank, March 3, 2000 Draft 3, Laszlo Lovei and team assessment paper, for a discussion of the most effective mechanisms to target subsidies to those in need.

Bulgaria's resource situation – with almost total dependency upon Gazprom for gas resources, and the need to address and curtail its dependence upon its nuclear power station – the need to adopt prices that maximize energy efficiency cannot be overstated.

### **C. Identification of Appropriate Accounting Standards for SERC, NEK and Other Industry Participants**

Attached to the tariff methodologies currently before the Council of Ministries are forms for providing financial and technical information to SERC. These forms were prepared by SERC, based a World Bank project, led by PA Consulting Group. The PA Consulting report provides a comprehensive identification of issues, proposed forms, and list of follow up activities. Follow up did not occur, however.

The PA Consulting effort was undertaken at the same time EU Phare was sponsoring a pre-privatization financial management project, led by KEMA, focusing on the regulated entity side (discos).

Hence, there appears to be a good starting point for work in the accounting area, but it is by no means done. The EEEA's references to SERC information gathering rights are minimal. Only the tariff methodology ordinances pending before the Council of Ministers provide identification of any specific information required to be produced to SERC, and nothing establishes any formal protocols or processes for providing and utilizing the gathered information. The Ministry has specifically requested assistance in the accounting area, and steps must be taken to bring theory into practice.

Additionally, the accounting and information gathering standards must now be prepared for a market situation, with third party access, and to function in a regional market. This will require at a minimum adaptations in the initial PA Consulting recommendations.

Critically, implementation of sound financial accounting practices through training, exchanges and other practical, real life experiences are needed to transform the abstract to reality. Fundamentally, SERC has the starting tools, but at present, has no ability to use them effectively. Programs must be directed at hands on application in order to implement a sustainable practice within SERC to effect a transparent and efficient settlement processes and impact the treasury function throughout the sector.

The EU and World Bank concentrated on financial management questions for good reason, and the need for transparent accounting only increases now, with market opening on the horizon. In addition, privatization and the promotion of competition within Bulgaria's energy sector requires gaining the confidence of Bulgarian and international investors. Transparent financial records and accessible, well-defined accounting practices inspire investor confidence. For all these reasons, accounting reform in Bulgaria is essential.

### **D. Strengthening SERC**

Just as it is crucial that the EEEA's replacement act present a coherent and modern legal and regulatory framework, it is equally important to have a competent and autonomous regulator implementing that framework.

At present, SERC lacks training, sufficient autonomy, price-setting expertise, adequate protocols,

procedures and practices to implement its responsibilities. SERC has just inherited price-setting responsibilities. Not only is regulation by an independent agency unfamiliar in Bulgaria, but the majority of SERC Commissioners are newly appointed. Turnover has been an issue and the multiple Commissioners lack regulatory experience.<sup>7</sup> SERC's staff is not well paid and has not been well trained. It lacks written protocols, internal procedures or established predictable practices. Currently no donor is providing assistance in this area.<sup>8</sup>

In the end, the powers of a regulator are expanded or limited not just by what the laws say on paper, but the job the regulator is doing. For example, the power of the Hungarian Energy Office, on paper, is limited. Its competence, however, has expanded its practical authority and, as a result, has improved the administration of sector operations. Conversely, when a regulatory body is not competent, whether or not it is given authority on paper, power will, as a practical matter, reside elsewhere. For example, a criticism has been made that the Slovenian energy agency has not had a sufficient knowledge and understanding of utility operations to implement its duties – whenever it issues a decision, inevitably give-and-take with other sector participants follows to try to adapt the decision to a workable result. The ultimate goal, whatever the papers bestowed upon the regulator in the law, is to provide credibility to that regulator, so that it will be viewed with respect and used as a resource in managing sector activities. SERC is not yet at this point.

Certain grounding principles increase the potential for regulator success, such as providing salaries competitive with the utility employees; hiring employees with practical experience with the utilities; including economists and lawyers, as well as engineers in the regulatory staff. But whatever the background of the Commissioners and staff, training is key. This is particularly true when the sector structure becomes more complicated and strategic investors enter the picture.

SERC must understand the accounting system it requires and utilizes to set rates. Telling SERC what standards to require will do no good unless SERC staff know why those standards are adopted; know how to use the standards to obtain needed information; and then have the authority, both on paper and in practice, to implement and enforce its own decision-making.

## **E. Electricity Sector Privatization**

The needs to be met in advancing electricity sector privatization are comprehensive. The issue addressed here is whether there is a finite area in which USAID assistance could be applied and leveraged, in conjunction with other donor efforts, to effect significant results.

A general overview of privatization experiences in the region and lessons learned from those experiences was prepared for USAID in June 2000, and is contained in the Annex. That memorandum provides a general template for how to manage and increase the success of a

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<sup>7</sup> SERC is composed of seven members, including a Chairman and a Deputy Chairman. The Members and the Chairman are appointed by a decision of the Council of Ministers and are appointed by the Prime Minister for a period of five years for a maximum of two terms. SERC suffered first from termination of a generation of its Commissioners, followed by expiration of short, staggered terms of some commissioners who did not remain with the organization.

<sup>8</sup> The EU has issued an expression of interest in providing major support (1+ million euros, over an 18 month period) in institution building at SERC. While the service procurement notice for this project indicates a provisional start date of March 2002, the tasks therein were initially identified in 2000 and some have become outdated (*e.g.*, assistance in issuing initial licenses). We have been told that at this point, the project does not contemplate any training partnerships, and that hands-on training is typically scheduled after the other work identified in the notice, which includes initial review, identification of needs, development and circulation of an action plan, and preparation and adoption of improved regulations and tariffs.

privatization in the sector.

As noted in that paper and previous sections of the Report, privatization success requires investor confidence, which requires a clear regulatory and legal framework and a competent autonomous regulator. At the same time, it requires a review of the social impact of privatization, and concerted support of employees to address mass increases in unemployment and poverty levels.

## IV. RECOMMENDATIONS

Key energy sector participants, from MEER to SERC to the power companies, are receptive and in most cases, eager for technical and financial assistance. Reforms must occur in a measured, considered and careful manner, in coordination with energy sector participants and international donors. There are several areas where USAID is uniquely positioned to affect significant advancements in the energy sector in Bulgaria. This Assessment explores what sorts of assistance can most effectively advance these goals, making realistic progress in the short, mid- and long-term.

### A. Proposed Assistance

#### 1. Improving the EEEA

##### *Recommendation:*

Support in drafting a replacement law that provides a clear and rational framework for the sector, consistent with EU requirements. Such support would include advice to MEER and the Parliament, with drafting assistance.

##### *Reasoning:*

Everything flows from the overarching law. SERC competency and authority, for example, flows from the power and autonomy that the regulator is given in the law. Tariff reform requires a law that spells out the governing parameters and the processes for setting prices. Market structures should be explained in the law. While privatizations are typically implemented by separate laws, a rational overarching energy law, spelling out how the sector will be structured and governed, is a key to any successful sale of assets to strategic investors.

The drafting of a replacement EEEA law need not begin from scratch. The existing law is not fundamentally flawed, and the previously proposed amendments to the EEEA provide a strong start in identifying needed improvements. (See Annex V, Appendix 7, Previous Comments on the EEEA.) The new Strategy and ordinances under preparation will provide the basic building blocks toward finalizing a coherent primary legislation. There are also examples from other countries that can provide strong templates. For example, the Czech Energy Act has many reasonable provisions and a rational overall structure. NARUC is currently providing assistance in Serbia to draft an energy law, and the current draft provides another viable starting point. Amendments to the Macedonian law to create a regulatory body and incorporate definitions (currently in Parliament) provide useful content. Armenian and Georgian laws have useful provisions on agency conduct and process. Aspects of various laws throughout the region



(Poland, Spain, Slovenia, Ireland, etc.) all provide useful examples.<sup>9</sup>

In sum, assistance in this area is needed to provide a cohesive legal basis for all other activities, and such assistance could be provided in a cost-efficient manner.

## **2. Introducing Modern and Rational Tariff Methodologies, Identification of Proper Accounting Standards and Establishing SERC Accounting Regulations and Strengthening SERC**

Given the weaknesses of SERC in its present form, strengthening of SERC is of critical importance. USAID is uniquely situated to provide such support based on its regional background and expertise on regulatory and energy reform in 15 Eastern and South Eastern European countries. We recommend not only specific training of SERC in accounting and tariff methodology, but an overall focus on institutional strengthening to develop an underlying structure that brings sustainability to tariff and accounting specific training and development. SERC institutional development must address the underlying issues that presently impede the successful functioning of SERC: lack of training, absence of adequate procedures and practices and structural shortcomings. Such development should occur as part of and alongside the tariff and accounting reforms, which are key early priorities given SERC's new price-making responsibilities.

### *Recommendation:*

A package of assistance to SERC that includes:

- Accounting - Review of the existing accounting methods and standards; identification of the proper accounting mechanisms, both substantively (the charter of accounts) and procedurally (regulations on processes for gathering and maintaining information, including protection of competitively sensitive information); and hands on training so that SERC staff understands the accounting and information gathering system. Exchanges are just one tool recommended to achieve enduring results.
- Tariffs – Taking the information gathered through the mechanisms noted above and translating them into rational prices, with parallel regulatory assistance in drafting appropriate protocols, adjusting methodologies to evolve from historical cost calculation to modern marginal costing and, price caps and performance standards, working to protect social assistance or lessen the severity of the impact of price reform on the poor, and training to understand the content and processes of these reforms.
- Broader Institutional Reform – Review of existing SERC structure, practices and procedures; providing assistance to SERC in drafting policies, protocols and procedures; and training in regulatory issues, including autonomy, independence, ethics, sustainability, and organizational and structural skills.

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<sup>9</sup> In drafting comments to the Croatian and Serbian draft laws, we included comments explaining why certain provisions were proposed and their analogies in other laws. See Annex V, Appendix 6 & 7. This draft, along with the Czech and Spanish laws, includes useful formats in which each sector participant's obligations and responsibilities are spelled out, in an effort to obtain the clarity noted as crucial, *supra*.

The mechanisms for providing this assistance could include:

- SERC teaming with an established regulatory body or members thereof who have undergone similar transitions from a command-and-control economy, combined with other short-term advisors, including accountants with experience in regulatory bodies;
- SERC coordination with other groups and donors to assess the social impact and structure tariff reform with minimal harm to the poor, while protecting the integrity and rationalization of the reform process;
- Partnership programs with NARUC on regulatory processes and roles in administrative decision-making, using tariff setting and accounting standards as substantive teaching topics;
- A partnership program through USEA with a transmission company, to provide SERC with similar expertise and training from the perspective of the regulated entity; and
- Exposure to other regional practices, through participation in the Energy Regulators Regional Association (“ERRA”) Southeast Europe working groups.

Such a package would need to be carefully organized and monitored by a coordinator who would maximize efficiencies, avoid redundancies, and ensure that the end results are being achieved.

*Reasoning:*

First, it is important that SERC play a key role in administering and leading the sector. Implementing tariff and accounting reforms through SERC is an efficient and effective way to advance multiple goals of increasing regulatory autonomy and competency, while rationalizing tariffs and setting the groundwork for the pricing and accounting separation needed for a functioning competitive market.

Second, experience teaches that assistance to the regulator, at least in the short-term, should be flexible enough to respond to immediate demands, while comprehensive enough to provide continually present resources and to avoid reinventing the wheel in every isolated training experience. In theory, a long-term resident advisor (*e.g.*, placing an expert in the agency) can fulfill these needs. From a practical and cost perspective, however, we believe that it makes more sense, at least in the short-term, to create a program involving a small team of experts to provide short-term, but repetitive and building advice, for multiple reasons:

- There is no point in placing a long-term advisor if the commitment from the counterparts is not there; an initial package of short-term assistance can establish whether the situation warrants such placement once initial gains are shown;
- No one advisor can provide optimum help on all topics faced by the agency. A carefully constructed package of help from a core group of experts broadens expertise while maintaining continuity;
- Using a program of short-term advisors allows for a more immediate and flexible response to the regulator’s needs;
- Such a team program can incorporate experts from countries in transition who can speak to the regulator from a perspective extremely attractive to the regulator.

Recent experience in Croatia provides one example. There, USAID is currently providing assistance to the Energy Institute, including the nominated head of the new regulatory body, through Dr. Gabor Szorenyi, the head of licensing at the Hungarian Energy Office. The recipients of this assistance have been extremely receptive to this support, again for many reasons. First, Dr. Szorenyi speaks the language of having been there – he understands that basics must be explained, and can answer specific questions raised in his own experience. Second, the regulator knows that the assistance is geared toward harmonization with EU requirements and incorporates processes accepted in the European model (while, ironically, having more experience with the establishment and operation of an energy regulatory body than EU counterparts, with the latter only recently adopting the concept of independent regulators). Third, inclusion of such assistance is cost effective, given the lower charges for such help. Leveraging existing available resources in the ERRA framework could also present a cost effective avenue for obtaining necessary training and expertise.

- U.S. experts can be combined in such a package in a targeted and cost effective manner through short-term advisors, a coordinating role, and through the available partnership programs noted above. The proposed New Jersey-SERC partnership could be incorporated in a consistent overall assistance package.

While tariff and accounting issues are obviously priority subject matters in establishing a rational legal framework and SERC competence, other topics are also important and could be treated both in addressing the content of the EEEA replacement law and SERC training. For example, dispute resolution mechanisms are crucial to the smooth functioning of a market. In promoting developing of a market, the EEEA replacement law should allow private entities to resolve disputes consistent with the Energy Charter Treaty, and make SERC a resource for dispute resolution where requested and/or in appropriate circumstances. Another important area requiring attention is the development of consumer-oriented attitudes and service quality standards. The Assessment team was repeatedly told by representatives from all sector areas that efforts had to be made to change mind-sets and set service standards. Such standards are critical in privatizing sectors (to ensure that the purchasing investor does not attempt to maximize profit by reducing service) and to increase public buy-in to difficult decisions (*e.g.*, increasing rates).

### **3. Privatization**

Prioritizing resources, and given the assistance committed by other donors in this area, we recommend that the assistance noted above be provided first. Thereafter, targeted opportunities for additional limited assistance could be identified if warranted. It should be noted that advancement of general privatization goals would occur under the recommended assistance programs: the EEEA replacement law would be developed with a goal of providing a sector structure providing confidence to strategic investors, and the SERC assistance would be equally geared to creating a regulatory body crucial to investor confidence, with pricing and accounting standards necessary for effective market operations.

## **V. ANNEX**

Below is the list of Appendices, to which we refer throughout the Report. These Appendices are attached to this Report as separate documents, and electronically are submitted as separate files.

Appendix 1 – Pierce Atwood Comments on the EEEA

- A. Bulgarian Energy and Efficiency Act, March 7, 2001
- B. Comments on the Current Draft Amendments, February 9, 2001
- C. Proposed Amendments – Comparison between November 8 and December 19 Versions
- D. Comments on the Draft Amendment to the Bulgarian Energy Law, November 30, 2000
- E. Further Comments on Bulgarian Energy Laws, October 13, 2000
- F. Comments on Draft EEEA Amendment, September 29, 2000
- G. Draft Energy and Energy Efficiency Act/Electric Sector Provisions, 27 May 1999

Appendix 2 – List of Meetings

Appendix 3 – List of Written Resources

Appendix 4 – *contained procurement sensitive information - not for public release*

Appendix 5 – Summary of Selected Non-USAID Donor Activities/ Ministry Matrix

Appendix 6 – Pierce Atwood Comments to the Croatian Energy Laws

- A. Final Comments on the Energy Law
- B. Final Comments on the Gas Law
- C. Final Comments on the Market Act
- D. Final Comments on the Regulatory Services Law

Appendix 7 – Pierce Atwood Comments (Draft 4) of the Serbian Energy Laws

Appendix 8 – Pierce Atwood/USEA/USAID Privatization Paper

Appendix 9 – Loss and Collection Rates

- A. Billing and Collection Rates of the Transport and Distribution of the District Heating Companies in 2001
- B. Technical and Commercial Losses of Electricity and Collection Rates in 2001

Appendix 10 – Energy Indicators for 1999

Appendix 11 – Electricity Prices

- A. Electricity Prices in Bulgaria, 2000
- B. Retail Prices in Selected Countries, 2000

Appendix 12 – Summary of the Management Plan of the Government of Bulgaria